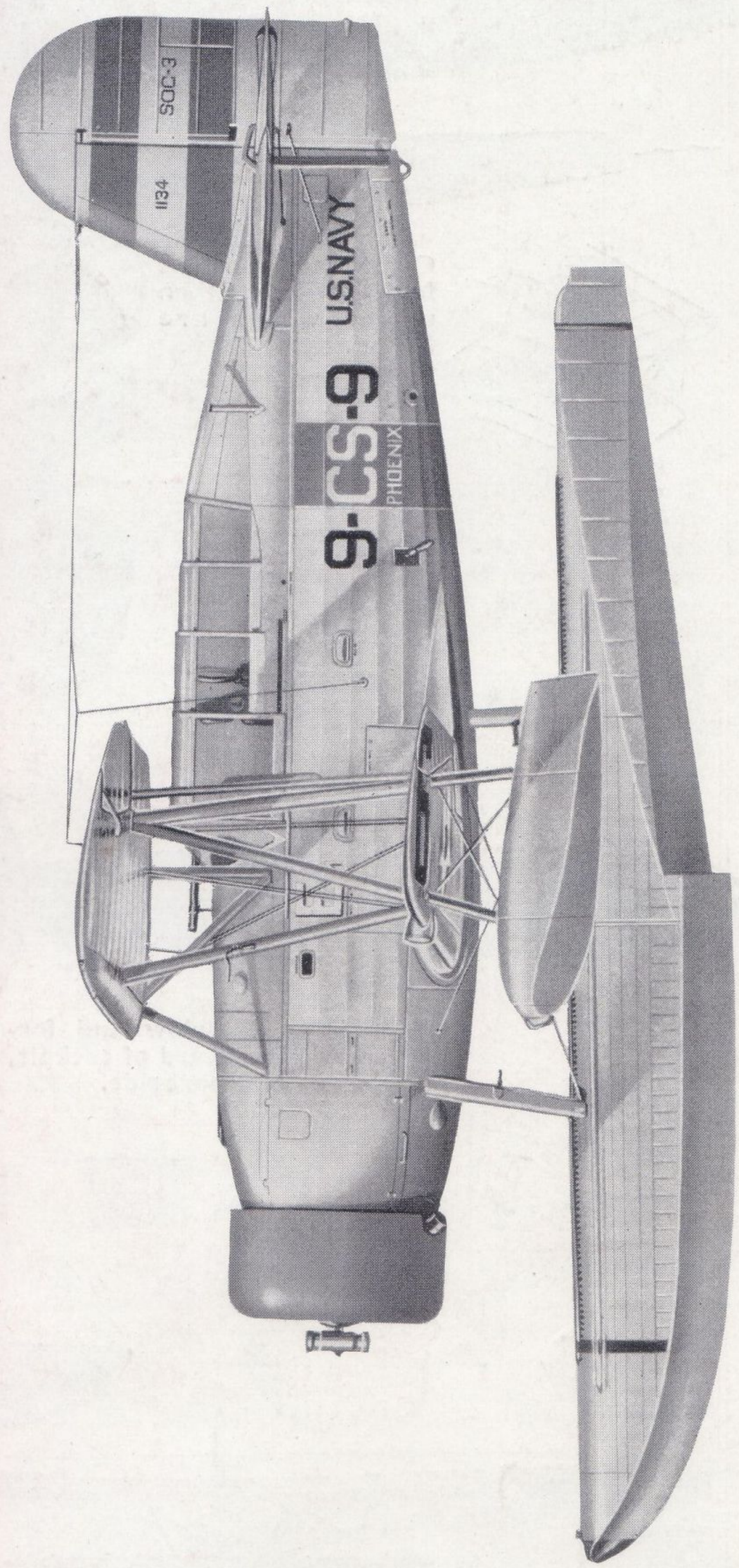
PROFILE PUBLICATIONS

The Curtiss SOC Seagull

NUMBER 194



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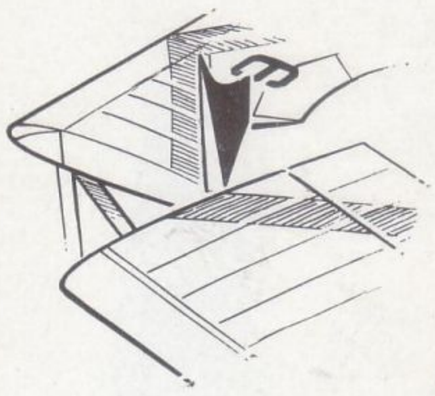
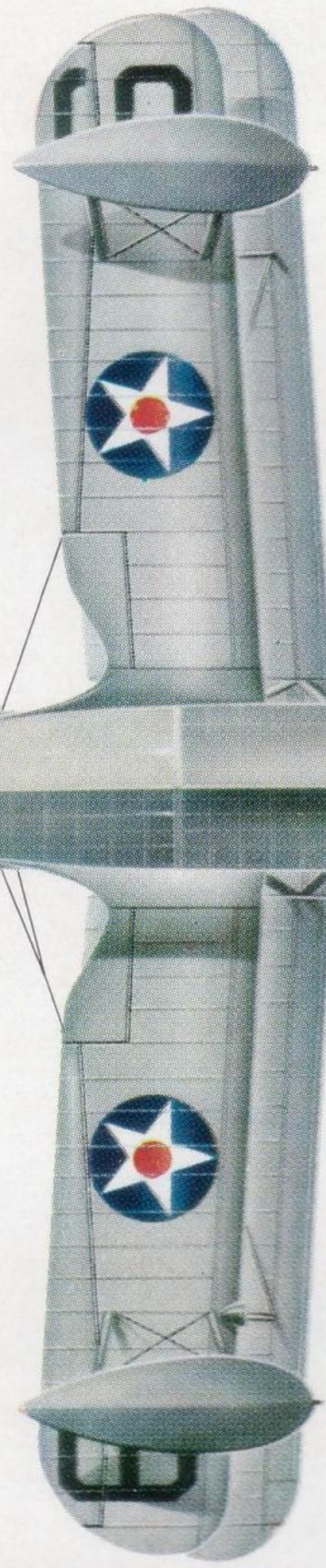
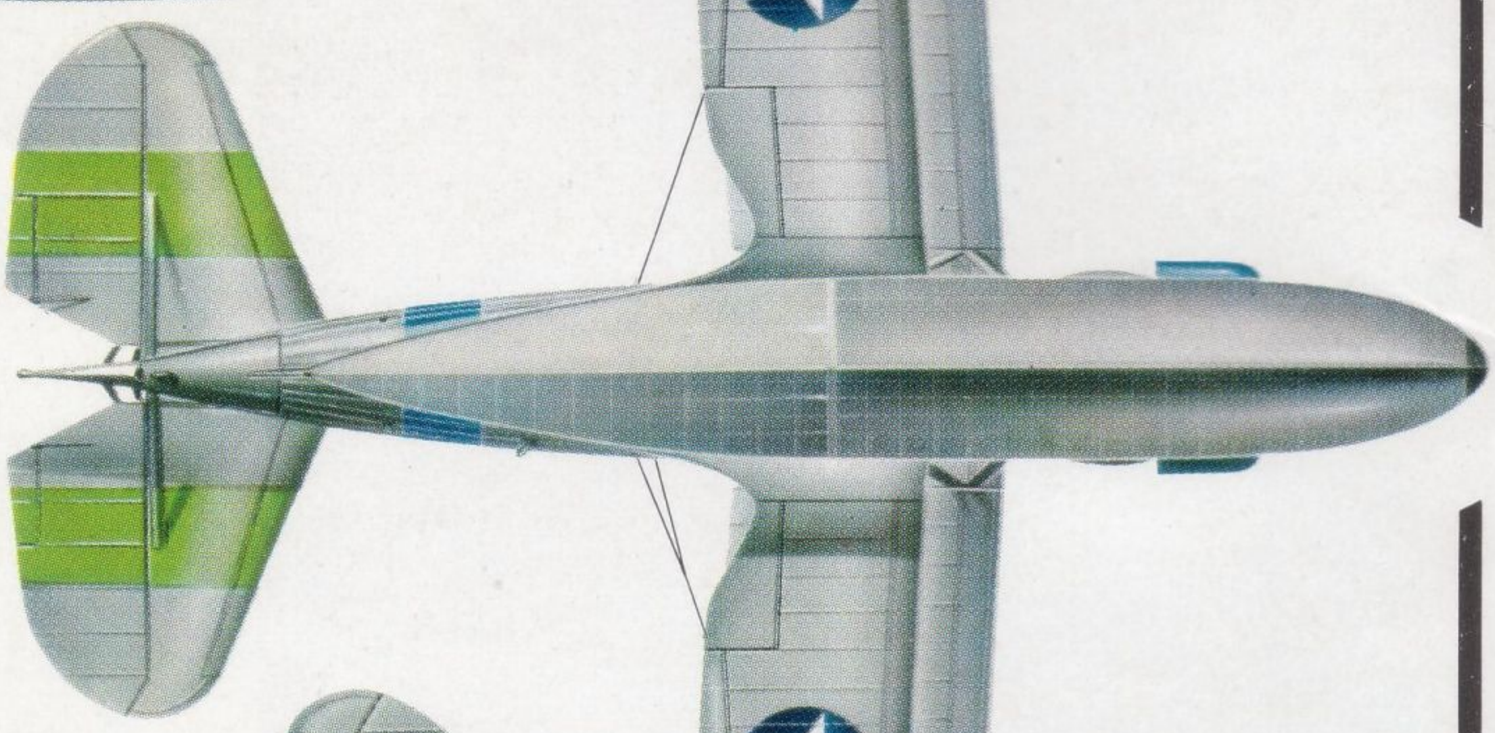
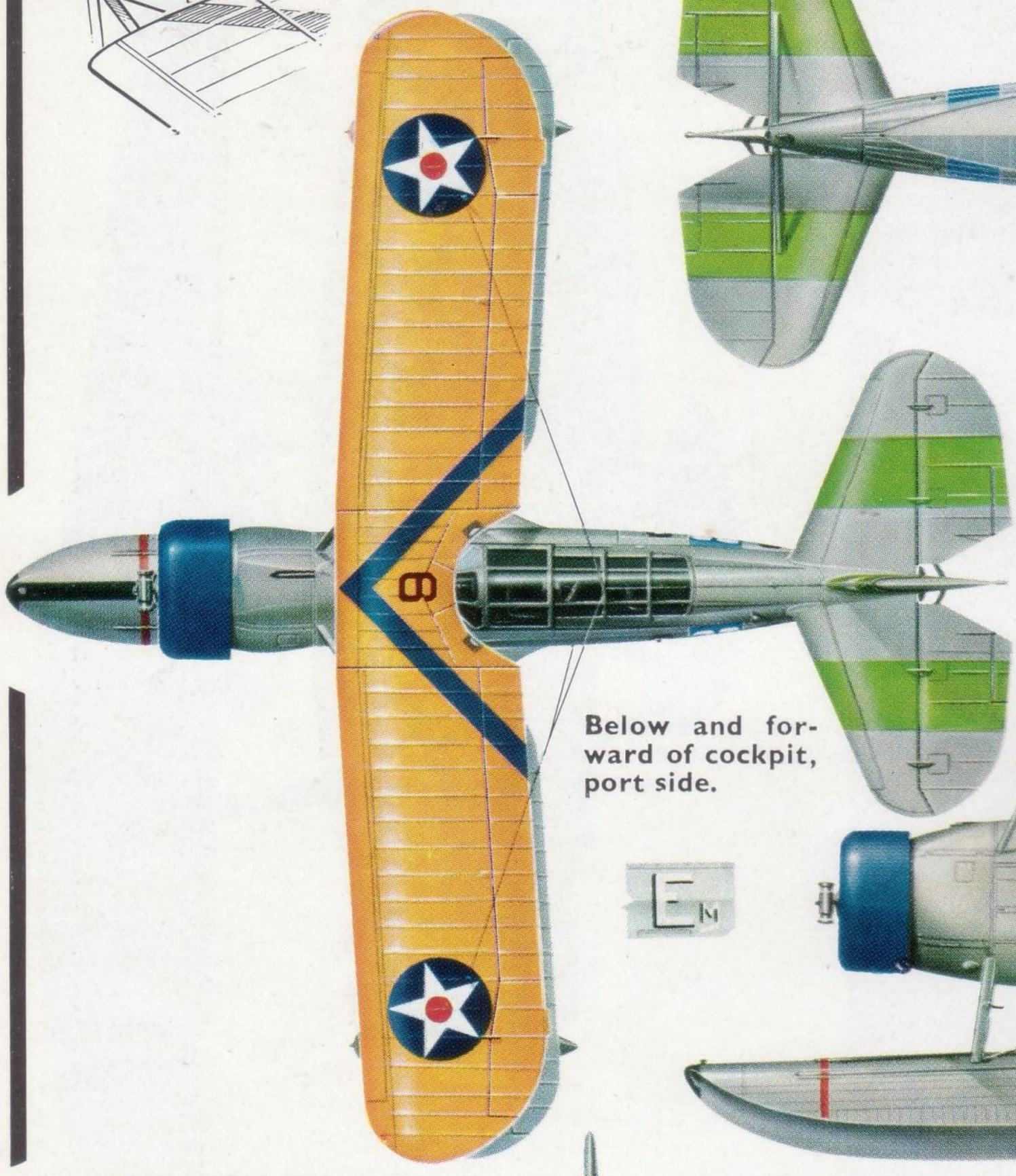


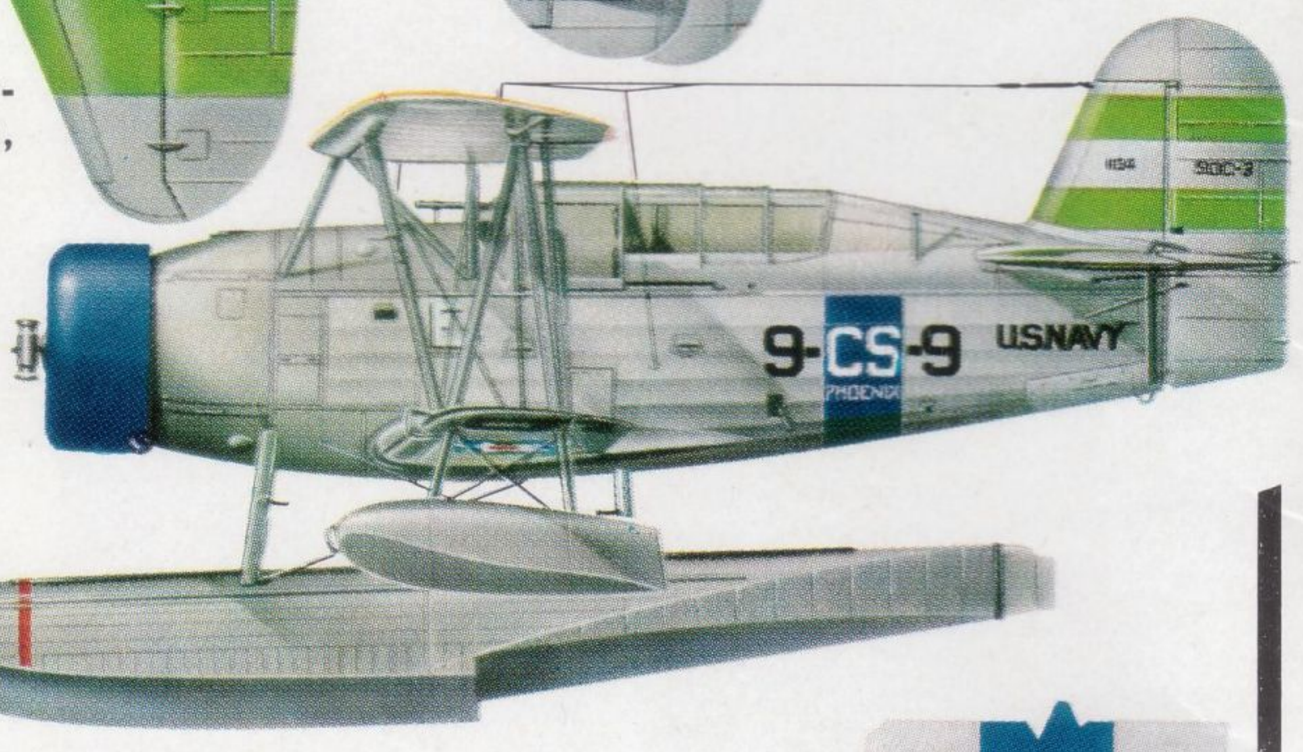
Centre section panels fold upwards when upper wings are folded.

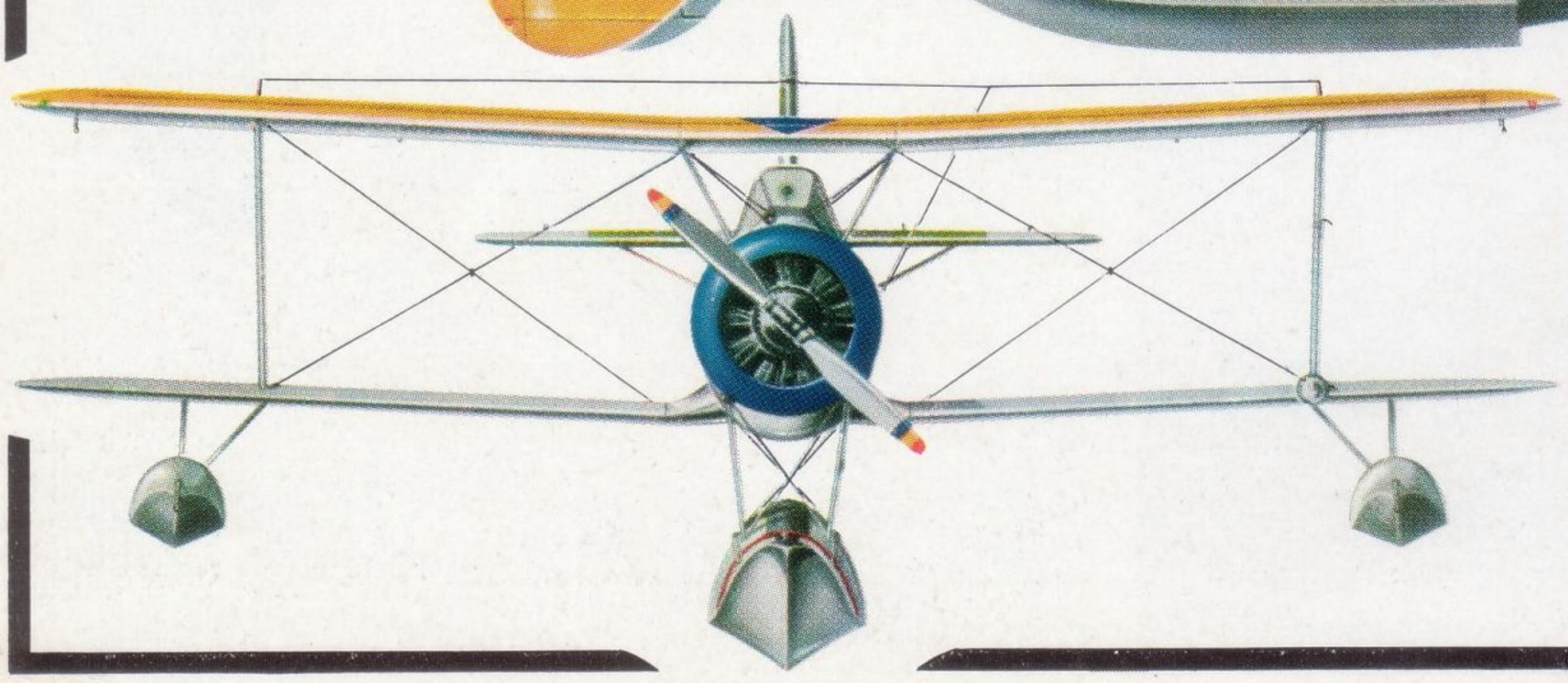






Below and forward of cockpit, port side.





Curtiss SOC-3 flown by Lt. (jg) Marion J. Reed, U.S. Navy; light cruiser *U.S.S. Phoenix*, Cruiser Division Nine, Battle Force, U.S. Fleet.

0 5′

An SOC-2 from the Heavy Cruiser U.S.S. Minneapolis *landing at a shore station while operating away from the ship; a sturdy, graceful airplane.*
(Photo: the author)

by William T. Larkins

The Curtiss SOC Seagull

The Curtiss SOC is one biplane which is long overdue for the credit that it justly deserves. It is very interesting how publicity, or the lack of it, determines history. If you ask "What airplane is most indicative of United States naval aviation in the 1930's?" the majority of people will answer "The Grumman biplane fighter—of course". None, or certainly very few, will ever say "The Curtiss SOC". This is due almost entirely to the lack of published information about this aircraft compared to the extensive coverage of the Grumman fighters in magazines and books over the years.

The truth is, however, that the SOC is the one most representative type in both numbers used and extent of service. In June 1940, for example, there were 178 F2F and F3F Grumman fighters in use by the U.S. Navy. The PBY "Catalina", (see *Profile* No. 183) second most numerous of the fleet aircraft in use, totalled 196 for the same period. By contrast there were 279 SOC's in operation—serving aboard every battleship and cruiser in the Fleet, aboard every aircraft carrier, as well as aboard a destroyer, a seaplane tender, two gunboats and a Coast Guard Air Station.

This remarkable Scout-Observation type also had the distinction of outlasting its intended replacement. The Ranger-powered Curtiss SO3C-1 proved inferior in use aboard cruisers and was in turn replaced in 1944 by the by-then obsolete SOC's which continued their service until they were finally replaced by the Curtiss SC-1 monoplanes. In addition, a number of them survived World War II, thus creating an enviable record of ten years of military service.

A contemporary to the Royal Navy's Fairey Seafox and Supermarine Walrus, the SOC "Seagull" began life in June 1933 as the XO3C-1 open-cockpit single-float amphibious biplane entered in competition against the Douglas X02D-1 and Vought X05U-1. All three flew in 1934 and by March 1935 Curtiss had won the competition with an order for 135 airplanes. The original category of battleship observation had been broadened to scout observation and thus the X03C-1 was redesignated XSOC-1 on 23rd March, 1935. Within eight months 18 SOC-1's had been delivered with the first operational aircraft assigned to the cruiser *U.S.S. Marblehead* on 12th November, 1935.

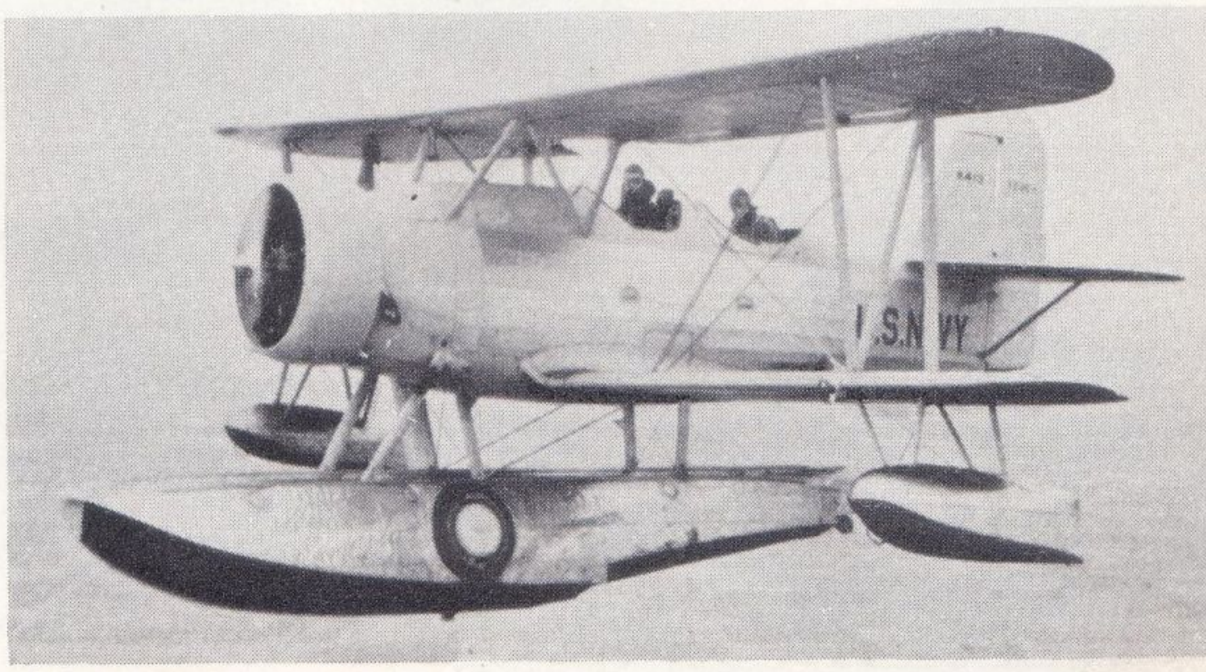
The total production of 307 aircraft is shown in Table 1 (below) of Navy serial number blocks. The three Coast Guard SOC-4's, purchased in 1938 by the Treasury Department, appear on this list as they were picked up by the Navy in 1943 along with other "civilian" aircraft and given Navy serial numbers.

TABLE 1: PRODUCTION LIST

Serials	*Total*	*Model*	*Engine*	*Contract*
9413	1	X03C-1 (XSOC-1)	R-1340-12	31827 of 6-19-33. Changed to XSOC-1 on 41178 of 3-23-35.
9856-9990	135	SOC-1	R-1340-18	41179 of 3-23-35.
0386-0425	40	SOC-1 (SOC-2)	R-1340-18	48561, 5-26-36. Changed to SOC-2 on 52347 of 1-11-37.
0950	1	XSO2C-1	R-1340-36	52347, 1-11-37.
1064-1146	83	SOC-3	R-1340-22	54679, 5-18-37.
1147-1168	22	SON-1	R-1340-22	P.O. 197-37 of 6-10-37.
1169-1190	22	SON-1	R-1340-22	P.O. 11-38 of 6-10-37.
48243-48245	3	SOC-3A	R-1340-22	USCG SOC-4's V171-V173.

(*N.B. Abbreviated dates in U.S. style: month-day-year*)

The prototype X03C-1 in flight showing the original open cockpits and amphibious gear. (Photo: Curtiss)



An early SOC-1 with 1936 markings. The tail band colour for VS-9S was white. Remaining colours were: VS-5B blue, VS-6B red, VS-10S yellow, VS-11S willow green, and VS-12S black. (Photo: the author)

SOC-1 9866 showing the letter "C" for Cruiser added to the squadron designation in July 1937 and thereafter painted as CS in the section leaders stripe on the fuselage. Cowl and stripe are black. (Photo: the author)

The SON-1 was the SOC-3 model built by the Naval Aircraft Factory at Philadelphia to increase production of the SOC and at the same time release the Curtiss facilities for the manufacture of other types.

The overall picture of numbers used from the time of initial delivery until the plane was officially classified as Obsolete may be seen in Table 2.

Each Heavy Cruiser carried four SOC's and the cowling of the fourth plane in each section was marked with a vertical band in the proper colour: -4 red, -8 white, -12 blue, -16 black and -20 green. (Photo: John C. Mitchell)

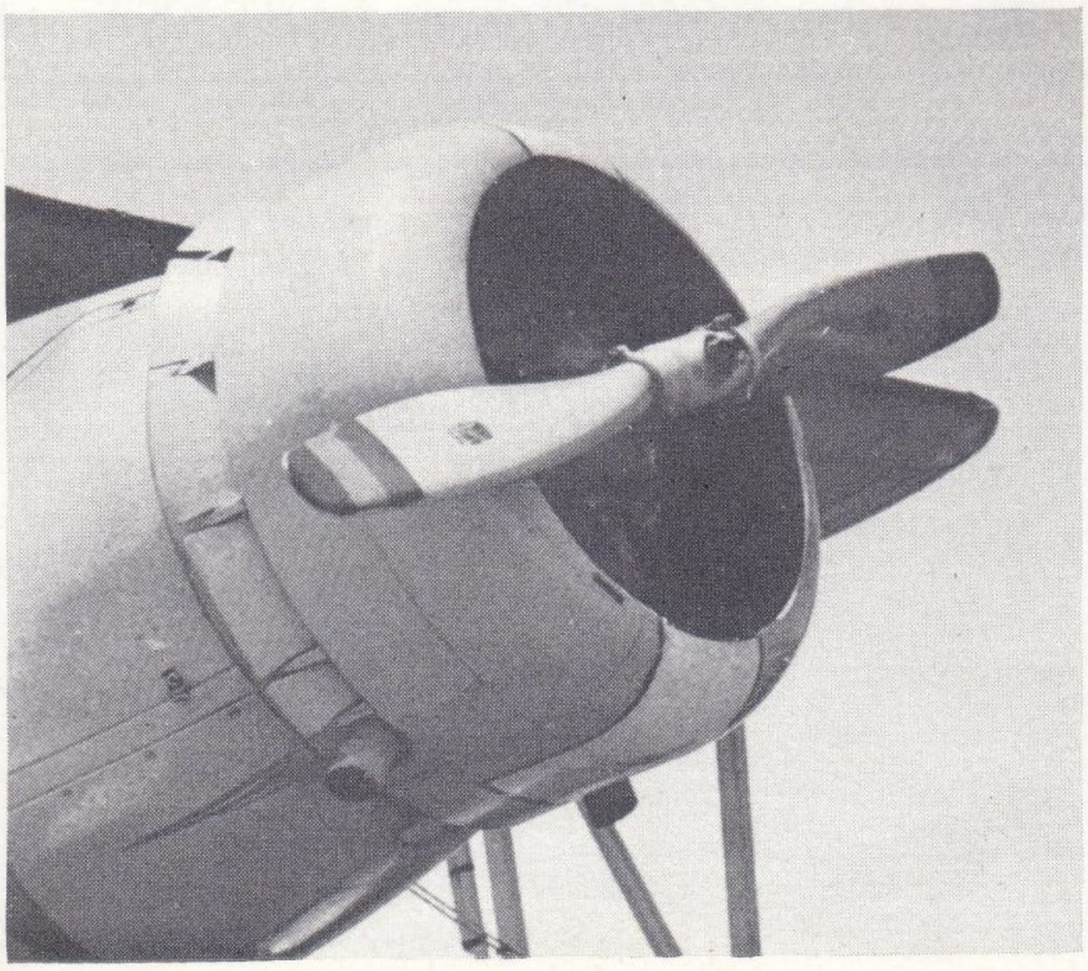


TABLE 2: NUMBERS IN SERVICE, 1935-1943

	Date								
Model	11/35	6/36	6/37	6/38	6/39	6/40	9/41	11/42	8/43
XSOC-1	1	1	1	1	1	1			
SOC-1	18	133	124	123	120	115	107	75	52
SOC-1A							1	9	6
SOC-2			40	38	38	37	37	24	17
SOC-2A								3	2
SOC-3				82	79	79	65	34	26
SOC-3A							9	21	18
SON-1					33	44	39	29	23
SON-1A								3	3
SOC-4				3	3	3	3	3	
Total	19	134	165	247	274	279	261	201	147

MISSION OF THE SOC

The SOC was designed as a replacement for the Vought 02U and 03U "Corsair" floatplanes being used at the time. Each battleship carried three SOC's for the primary purpose of spotting long range gunfire—thus extending the accurate range of its 14-inch guns. All cruisers carried four plane units (except for CL4 to CL13 of the Omaha class which carried only two) and these were primarily for scouting—extending the "eyes of the fleet" far beyond visual shipboard range.

Those ships that were designated as Flagships of some unit of the Fleet, such as the Battle Force or Scouting Force, carried an additional airplane as the Flagplane or flying "Admiral's barge" for the use of the force commander.

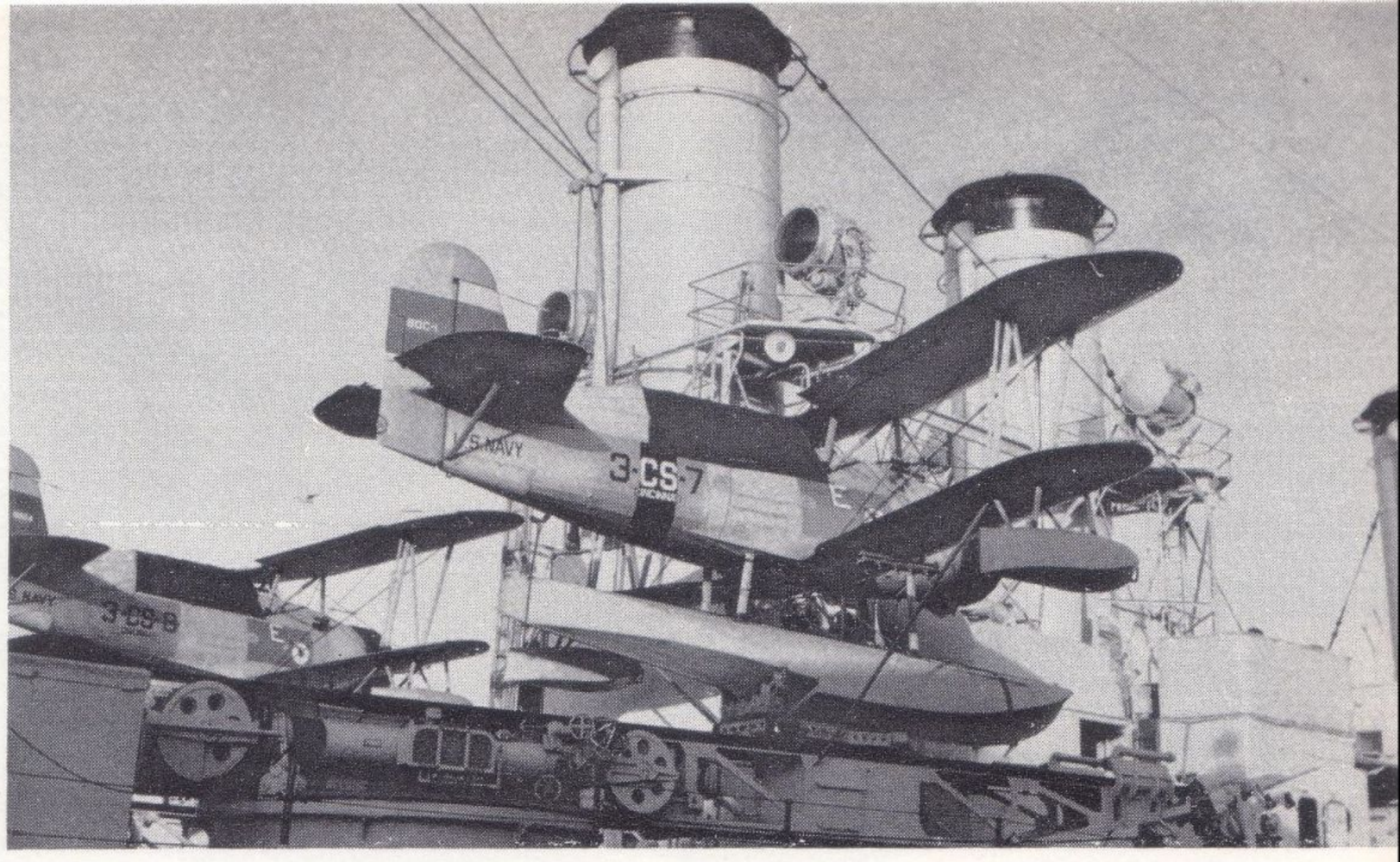
All models of the SOC were convertible from floatplanes to landplanes and operated on wheels from naval air stations ashore when their parent ship was in port for any length of time or undergoing overhaul.

The mission performed by the SOC's is repeatedly shown in the squadron insignias of the battleship and cruiser scouting squadrons. VO-1 (Observation Squadron One) shows a gun turret and radio waves; VO-3 has "Oswald the Lucky Rabbit" riding a projectile and directing it with binoculars and a pair of reins; VO-4 shows a battleship belching smoke and flame in a broadside salvo. The cruiser scouting squadron insignias, on the other hand, do not show any guns but instead utilize binoculars, a flying sea horse, a flying fish and four dolphins.

OPERATION

Except for carrier operations all SOC's operated on a single float from a shipboard catapult while at sea. Take-offs were made at full power with flaps full down.

The recovery procedure called for the ship to make a sweeping turn by which the ships wake would produce a relatively calm area for the plane to land upon. Once down the pilot would taxi alongside the moving ship and up onto a sort of sea sled, known as the "plane trap", being towed by the ship. The surface of this trap was covered with a heavy rope netting and a rearward angled bar pointing down from the front undersection of the float (officially known as the recovery hook installation) would engage the net as the pilot eased back on the throttle. As soon as the plane was firmly engaged a hook was lowered



The two SOC-1's of the U.S.S. Cincinnati *resting on their catapult cradles. This Light Cruiser was one of ten that carried two-plane sections with full-coloured cowl and fuselage band on Number 1 (red), 3 (white), 5 (blue), 7 (black) and 9 (green).* (Photo: the author)

from the overhead crane and the rear-seat man, standing astride the cockpit, grabbed the hook and inserted it into the hoisting sling housed in the upper centre panel of the top wing.

As can be well imagined this operation was a rough action requiring skilled seamanship and co-ordination on the part of all hands. A good idea of VSO flying is imparted by the explanation that VO-2 used in describing why they chose the pelican for their squadron insignia:

> "We believe it to be symbolic of the squadron equipment and mission because his beak is equipped with a hook similar to the recovery hook of the planes, and because the parallel between the pelican and the planes is undeniably close, to wit—his take-off is made in a shower of spray and a series of bounces, in landing he poises for an instant and then plunges downward with a splash which may be heard for half a mile and is engulfed in a spray which completely obscures the bird, from which he often emerges tail first".

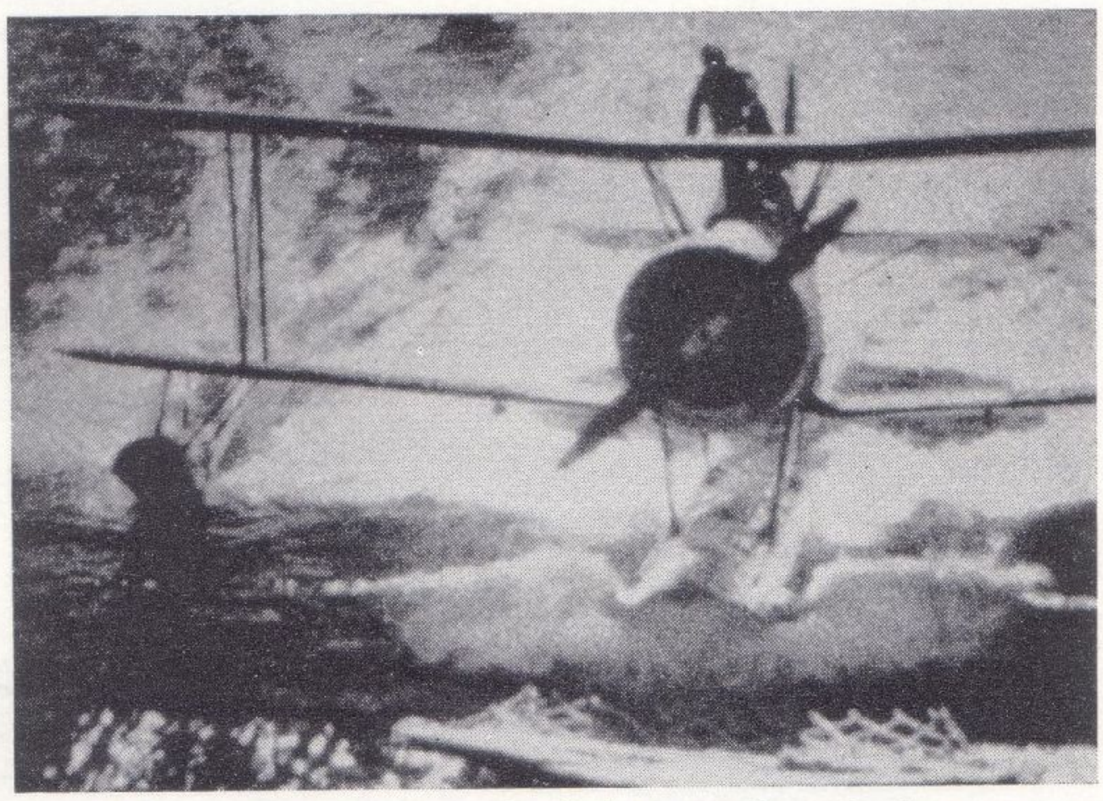
In late 1941, after six years of catapult service, a completely new field of operation was opened up for the SOC with the formation of escort carrier squadrons. The planes used were fitted with arresting gear hooks and had the suffix letter "A" added to their model designation. The first squadron to go into service with these planes was VS-201 which flew 12 SOC-3A's alongside 7 Brewster F2A-3's aboard the *U.S.S. Long Island.*

SOC FLAGPLANES

One of the honours given to the SOC was its extensive assignment as the personal command plane of 15 high ranking officers. The greatest prestige, of course, was its use by CinCUS (Commander-in-Chief of the United States Fleet) replacing his Vought 03U-3 in 1938 and continuing in this service until it was in turn replaced by a Vought OS2U-1 in 1941.

The following Commanders used SOC's as flagplanes:

> Commander-in-Chief, U.S. Fleet; Commander, Battle Force; Commander, Cruisers Scouting Force; Commander, Carrier Division One; Commander, Carrier Division Two; Commander, Carrier Division Three; Commander, Patrol Wing Two; Commander, Patrol Wing Five; Commander, Patrol Wing Ten; Commander, Scouting Force; Commander Aircraft, Asiatic Fleet; Commander Aircraft, Altlantic Fleet; Commander Aircraft, Base Force; Commander Aircraft, Battle Force; Commander Aircraft, Scouting Force.



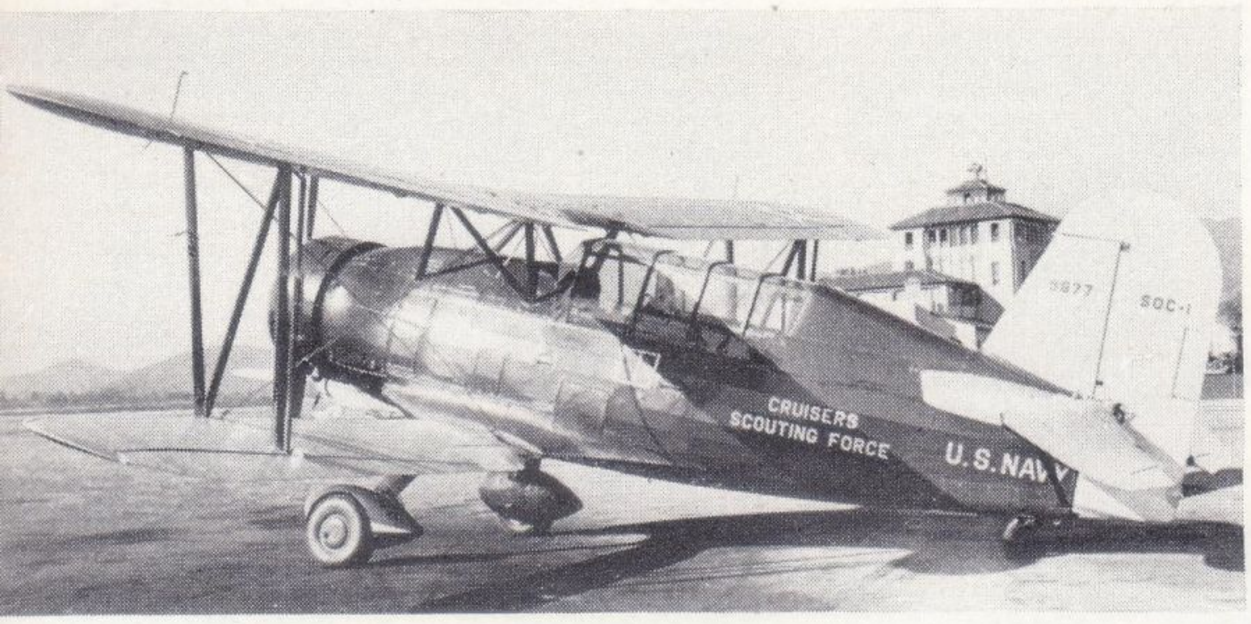
An SOC-1 sliding up onto the "plane trap" with the rear seat observer standing with the hoisting sling awaiting the hook from the overhead crane. (Photo: U.S. Navy)

These planes were painted with a dark blue fuselage, silver wings and silver tail. The name of the command was lettered in white on both sides of the rear fuselage. As an added note of distinction the SOC-3 used by CinCUS had a solidly coloured dark blue tail surface.

SQUADRON USE

In order to give an accurate idea of the widespread

The all-blue Flagplane of the Commander-in-Chief of the United States Fleet. It replaced an 03U-3 in June 1938 and was in turn replaced by an OS2U-1 in late 1940. It was the only command plane in the Navy to have an all-blue tail colour, all others having silver tails. In 1942 an SOC was assigned to the Chief of the Bureau of Aeronautics of the Navy Department. (Photo: the author)



The colours of pre-war Flagplanes are shown by this SOC-1; dark blue fuselage with silver wings and tail. A placard with the proper number of stars was placed in the holder just below the pilot's cockpit whenever the Admiral was aboard the airplane. Rear Admiral -two stars, Vice Admiral -three, Admiral -four. (Photo: John C. Mitchell)

A few ships had aircraft assigned to the ship rather than to a squadron as with this SOC-2 from the Light Cruiser U.S.S. Trenton. *Planes of this type used the old red, white and blue tail stripes.* (Photo: Gordon S. Williams)

Battleship Observation squadrons painted the name of the ship to the rear of the fuselage. VCS squadrons painted it directly below the letters CS. Observation squadrons using SOC's had their tails painted a solid colour as: VO-1 red, VO-2 white, VO-3 blue, VO-4 black, VO-5 yellow. (Photo: the author)

Factory photo taken December 23rd, 1937 of a brand new SOC-3 for VO-2. (Photo: Curtiss neg. no. SF-10708)

use of the SOC Table Three on pages 9-12 shows the complete assignment of every plane in June 1940—the year when the SOC was at the peak of its career. This composite list brings together a vast amount of information that is published here for the first time.

TAIL COLOURS

In the October 1940 Bureau of Aeronautics Painting Specifications new tail colours were assigned for all shipborne units. These were as follows:

VO-1 Insignia Red, Solid; VO-2 White, Solid; VO-3 True Blue, Solid; VO-4 Black, Solid; VO-5 Lemon Yellow, Solid; VCS-2 True Blue, Double Horizontal Stripe; VCS-3 Insignia Red, Double Horizontal Stripe; VCS-4 True Blue, Single Horizontal Stripe; VCS-5 Lemon Yellow, Single Horizontal Stripe; VCS-6 Black, Single Horizontal Stripe; VCS-7 Willow Green, Single Horizontal Stripe; VCS-8 Black, Double Horizontal Stripe; VCS-9 Willow Green, Double Horizontal Stripe; *U.S.S. Raleigh* Insignia Blue, Double Horizontal Stripe; *U.S.S. Detroit* Insignia Blue, Double Horizontal Stripe; *U.S.S. Richmond* Insignia Red, Double Horizontal Stripe.

WORLD WAR TWO

By mid-1941 all battleship observation squadrons had been equipped with Vought OS2U-1's but the entrance of the United States into World War II saw all cruisers in the U.S. Navy equipped with SOC's. This continued through 1942 and in August 1943 there were still nine cruisers in the Atlantic, and eighteen in the Pacific, equipped with the "Seagull".

A completely new type of operation for the SOC began in 1941 when several SOC-3's had carrier arresting gear added; they became SOC-3A's. Twelve of these joined with seven Brewster F2A-2's to form VS-201 aboard the first escort carrier, *U.S.S. Long Island.* The late 1941 all-grey paint gave way to two-tone camouflage and a squadron redesignation when VS-201 became VGS-1 (Escort Scouting Squadron One) in 1942.

By late 1942 four other escort carriers were operating with SOC-3A's in the Pacific Fleet: VGS-9 aboard the *U.S.S. Bogue*, VGS-11 on the *U.S.S. Card*, VGS-13 on the *U.S.S. Core*, and VGS-18 on the *U.S.S. Altamaha.* In addition the *U.S.S. Charger*, assigned to the Atlantic Fleet, was operating 8 SOC-3A's and 3 SON-1A's as VGS-30. In March 1943 VGS-1 became VC-1 and the other VGS squadrons converted to Composite Squadrons and exchanged their SOC's for TBF-1's.

The surviving SOC's spent the remainder of the war in utility units, service units, undergoing overhaul or in storage. One of the most interesting is illustrated in the 1946 dark blue Navy colour. This was an SOC-3 used by the Commanding Officer of SOSU-3 (Scout Observation Service Unit Three) at N.A.S. Alameda and its striking appearance surely must have caused a twinge of nostalgia for those who remembered the pre-war SOC Flagplanes.

The SOC served with honour and distinction from Alaska to the Philippines, in the Atlantic and the Mediterranean, and throughout the South Pacific. It has carried king and commoner alike, and deserves the Navy's accolade "Well done!"

CONSTRUCTION DETAILS

The fuselage was constructed of a welded steel tube frame covered with aluminium alloy panels in the

1-0-3 landing clearly shows the full span automatic slots in the leading edge of the top wing and the position of the stars, on the lower wing, which had to be moved inboard because of the wing floats. (Photo: the author)

An SOC-3 from the battleship U.S.S. Pennsylvania *ready for take-off.* (Photo: the author)

Rare photo of two SOC-3's from Marine Scouting Squadron Two-M at San Diego. Note unusual addition of flotation gear on forward fuselage. (Photo: William L. Swisher)

(Left) *The Naval Aircraft Factory at Philadelphia built 44 duplicates of the SOC-3 as the model SON-1. Number 1166, shown here, was operating with VO-3 aboard the battleship* U.S.S. Mississippi. (Photo the author). (Right) *A January 1937 photo of the XS02C-1 which had flaps on both upper and lower wings and a minor engine change; one only was built.* (Photo: Curtiss neg. no. SF-10024)

(Left) *Starting in March 1941 the colourful squadron markings were replaced with a dull overall grey. The national insignia was placed on both sides of the fuselage but removed from the top and lower left wings. The squadron designation and ship name, in white, was retained until after 7th December, 1941.* (Photo: the author). (Right) *One of the main advantages of the SOC over the previous Vought observation types was that its wings would fold to give a total width of only 12 feet 6 inches. Some Second World War cruisers had hangers above or below deck for repair work.* (Photo: the author)

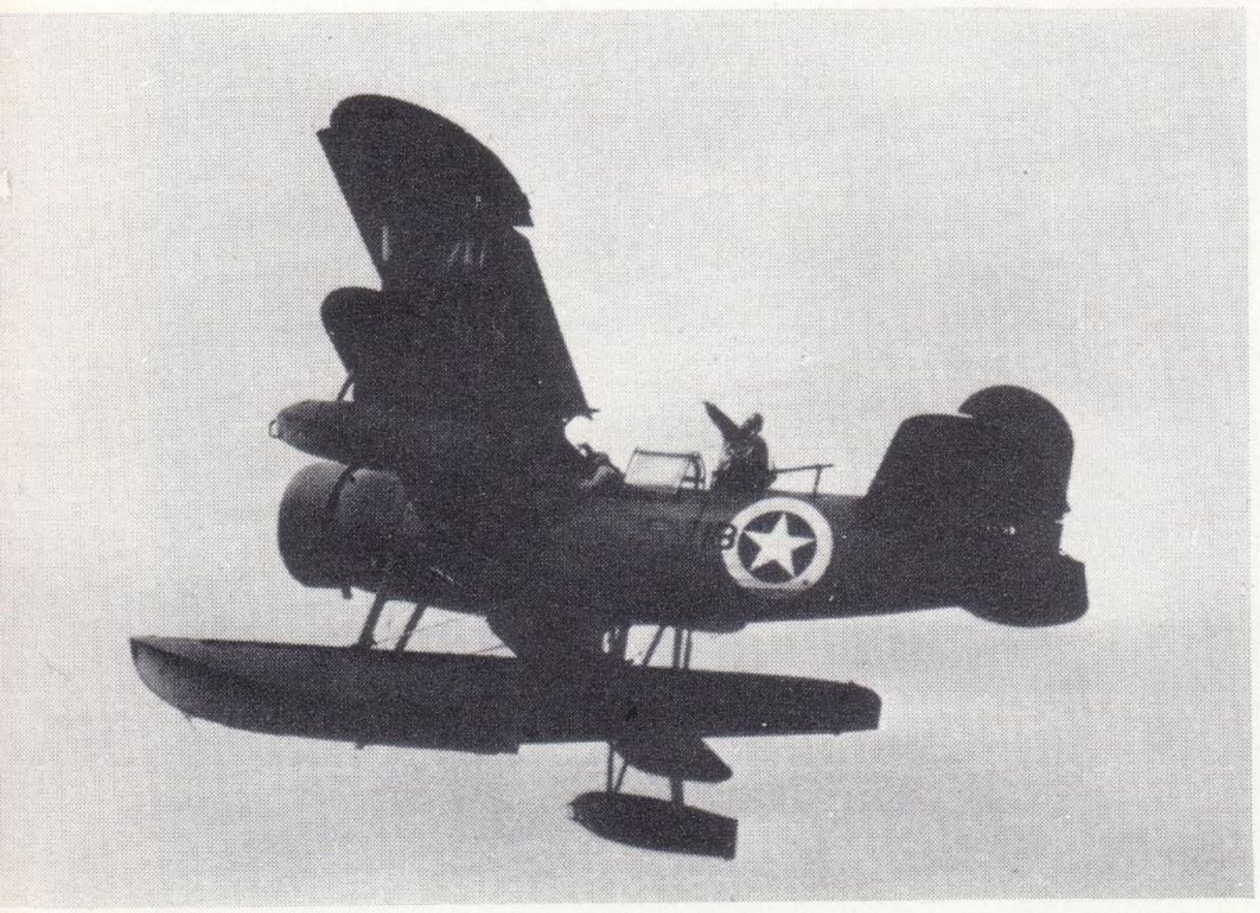
front and fabric in the rear. The wings were an aluminium alloy frame covered with fabric. The fin and horizontal stabilizers were metal covered while the rudder and elevators were fabric covered.

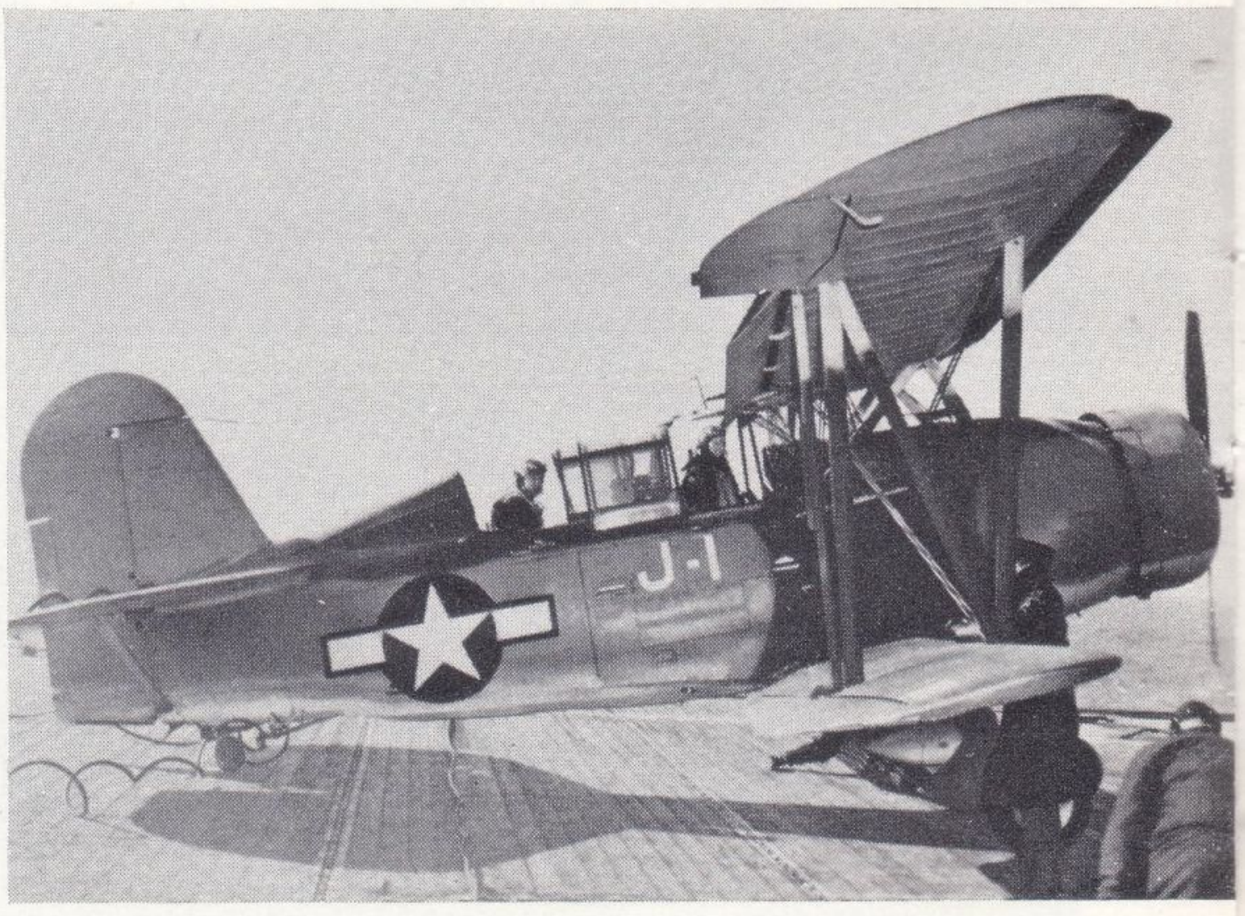
One of the unique design features was the use of Handley Page automatic slots on the leading edge of the top wing. These were supported on steel forged curve tracks moving in ball bearing roller guides. The three panels, two wing panels plus the centre section, were not connected to each other and thus operated independently. A manual lock was provided for the pilot to use in flight but this was automatically disengaged as soon as the flaps were lowered.

A life raft was stowed under the pilots seat, a first aid kit was under the turtleback aft of the gun, a tool kit was mounted on the forward side of the firewall, a map case was on the left side of the front cockpit near the floor, and a hoisting sling was housed in the upper centre wing panel aft of the rear beam.

The Pratt and Whitney R-1340 engine of 550 h.p. was used on all models, driving a nine-foot diameter single piece Curtiss propeller.

(Left) *An SOC-3 flying in support of the North African invasion. Note the yellow circle surrounding the 1942 centreless star, and observer's machine gun in the "alert" position.* (Photo: U.S. Navy). (Right): *An SOC-1A attached to the Utility Unit of the* U.S.S. Charger (*CVE-30*), *an escort carrier used to train CVE crews in Chesapeake Bay. Photo taken 6th January, 1944.* (Photo: National Archives 80-G-208390)





Cruiser Division Three		U.S.S. Concord CL10 (Flagship)
Cruiser Scouting		U.S.S. Cincinnatti CL6
Squadron Three		U.S.S. Milwaukee CL5
C.O.: LCDR. H. L. Hopping		U.S.S. Omaha CL4
		U.S.S. Trenton CL11
	3 SOC-1, 4 SOC-2, 1 SOC-3, 1 SON-1	
Cruiser Division Eight		U.S.S. Philadelphia CL41 (Flag)
Cruiser Scouting		U.S.S. Brooklyn CL40
Squadron Eight		U.S.S. Nashville CL43
C.O.: LCDR. C. Briggs		U.S.S. Savannah CL42
	6 SOC-1, 5 SOC-3, 6 SON-1	
Cruiser Division Nine		U.S.S. Honolulu CL48 (Flag)
Cruiser Scouting		U.S.S. Boise CL47
Squadron Nine		U.S.S. Phoenix CL46
C.O.: LCDR. C. E. Ekstrom		U.S.S. St. Louis CL49
	1 SOC-1, 5 SOC-3, 11 SON-1	
U.S.S. Helena CL50	Ship Unit	1 SOC-3, 3 SON-1

COMMANDER DESTROYERS, BATTLE FORCE

Commander Flotilla One, U.S.S. Raleigh CL7	2 SOC-3
Commander Flotilla Two, U.S.S. Detroit CL8	2 SOC-1

CARRIER DIVISION ONE

Commander, Carrier Division One	Rear Adm. Aubrey W. Fitch	
Flag Unit	1 SOC-1	
U.S.S. Saratoga CV3	Utility Unit	2 SOC-3
U.S.S. Lexington CV2	Utility Unit	3 SOC-1

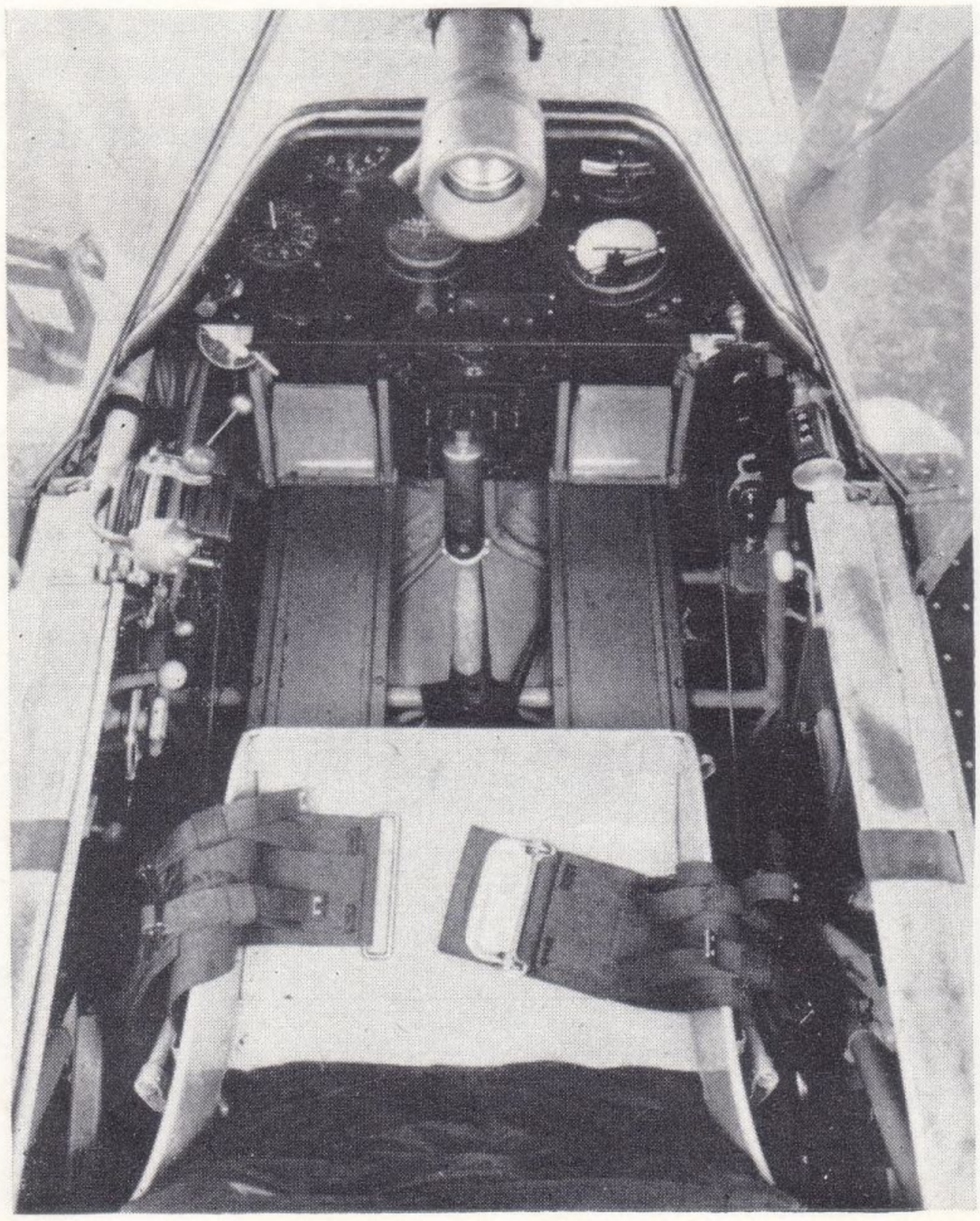
CARRIER DIVISION TWO

Commander Aircraft, Battle Force, and Commander Carrier Division Two	Vice Admiral William F. Halsey Jr.	
Flag Unit	2 SOC-3	
U.S.S. Yorktown CV5	Utility Unit	2 SOC-2
U.S.S. Enterprise CV6	Utility Unit	1 SOC-3

SCOUTING FORCE

Commander, Scouting Force	Vice Admiral Adolphus Andrews	
Flag Unit	1 SOC-3	
U.S.S. Indianapolis CA35	Ship Unit	3 SOC-1, 1 SOC-2
	(Operating with Cruiser Division Six)	
Cruiser Division Four		U.S.S. Northampton CA26 (Flag)
Cruiser Scouting		U.S.S. Houston CA30
Squadron Four		U.S.S. Pensacola CA24
C.O.: LCDR. J. P. W. Vest		U.S.S. Salt Lake City CA25
	13 SOC-1, 3 SOC-2	
Cruiser Division Five		U.S.S. Chicago CA29 (Flagship)
Cruiser Scouting		U.S.S. Chester CA27
Squadron Five		U.S.S. Louisville CA28
C.O.: LCDR. J. M. Carson		U.S.S. Portland CA33
	14 SOC-1, 2 SOC-2	
Cruiser Division Six		U.S.S. Minneapolis CA36 (Flag)
Cruiser Scouting		U.S.S. Astoria CA34
Squadron Six		U.S.S. New Orleans CA32
C.O.: Lt. G. A. McLean		U.S.S. San Francisco CA38
		(U.S.S. Indianapolis)
	13 SOC-1, 5 SOC-2	

Front cockpit of the SOC-1. The counter on the right side was set before each flight and then showed the number of rounds remaining in the fixed gun operated by the pilot.
(Photo: National Archives —72-AC-96K-9514)



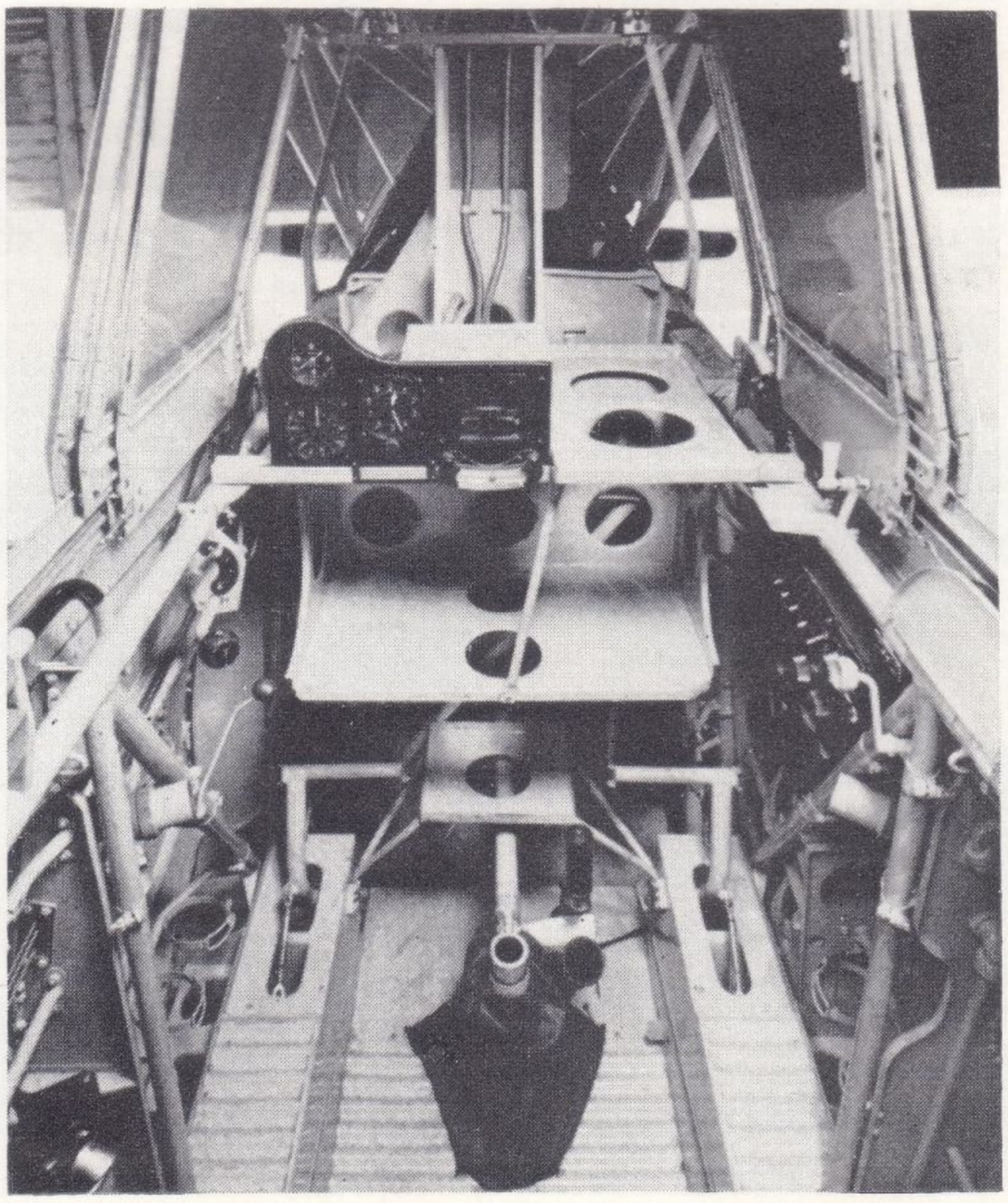
Three new SOC-4's were purchased by the U.S. Coast Guard. During 1938-1939 V171 served at San Diego, V172 aboard the Coast Guard Cutter Bibb *based at Norfolk, and V173 at Port Angeles near Seattle. From 1940 to 1942 all three were stationed at the Coast Guard Air Station at Miami, Florida.*
(Photo: Gordon S. Williams)

Commander Aircraft, Scouting Force		
Flag Unit		1 SOC-1, 1 SOC-3
	(Aboard U.S.S. Memphis CL13)	
Commander, Patrol Wing One, San Diego, California		
Utility Unit		1 SOC-1
Commander, Patrol Wing Two, Pearl Harbour, T.H.		
Utility Unit		1 SOC-1, 1 SOC-2
Flag Unit		1 SOC-1
	(Aboard U.S.S. Wright AV1)	
Submarine Force		
U.S.S. Richmond CL9		2 SOC-3

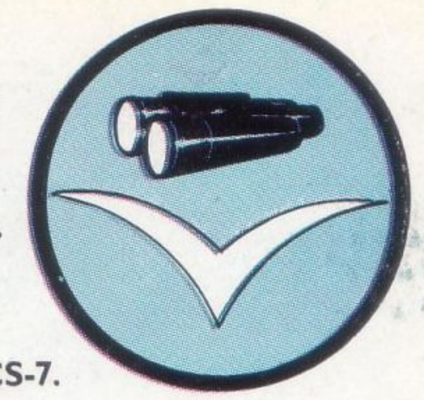
ATLANTIC SQUADRON

Battleship Division Five		U.S.S. Texas BB35 (Flagship)
Observation Squadron Five		U.S.S. Arkansas BB33
C.O.: LCDR. L. P. Pawley		U.S.S. New York BB34
	4 SOC-3, 5 SON-1	
Cruiser Division Seven		U.S.S. Wichita CA45 (Flag)
Cruiser Scouting		U.S.S. Quincy CA39
Squadron Seven		U.S.S. Tuscaloosa CA37
C.O.: LCDR. R. R. Waller		U.S.S. Vincennes CA44
	9 SOC-1, 7 SOC-2	
U.S.S. NOA DD343	Aviation Unit	1 XSOC-1, 1 SON-1
U.S.S. Ranger CV4	Utility Unit	2 SOC-1
U.S.S. Wasp CV7	Utility Unit	1 SOC-1, 2 SON-1

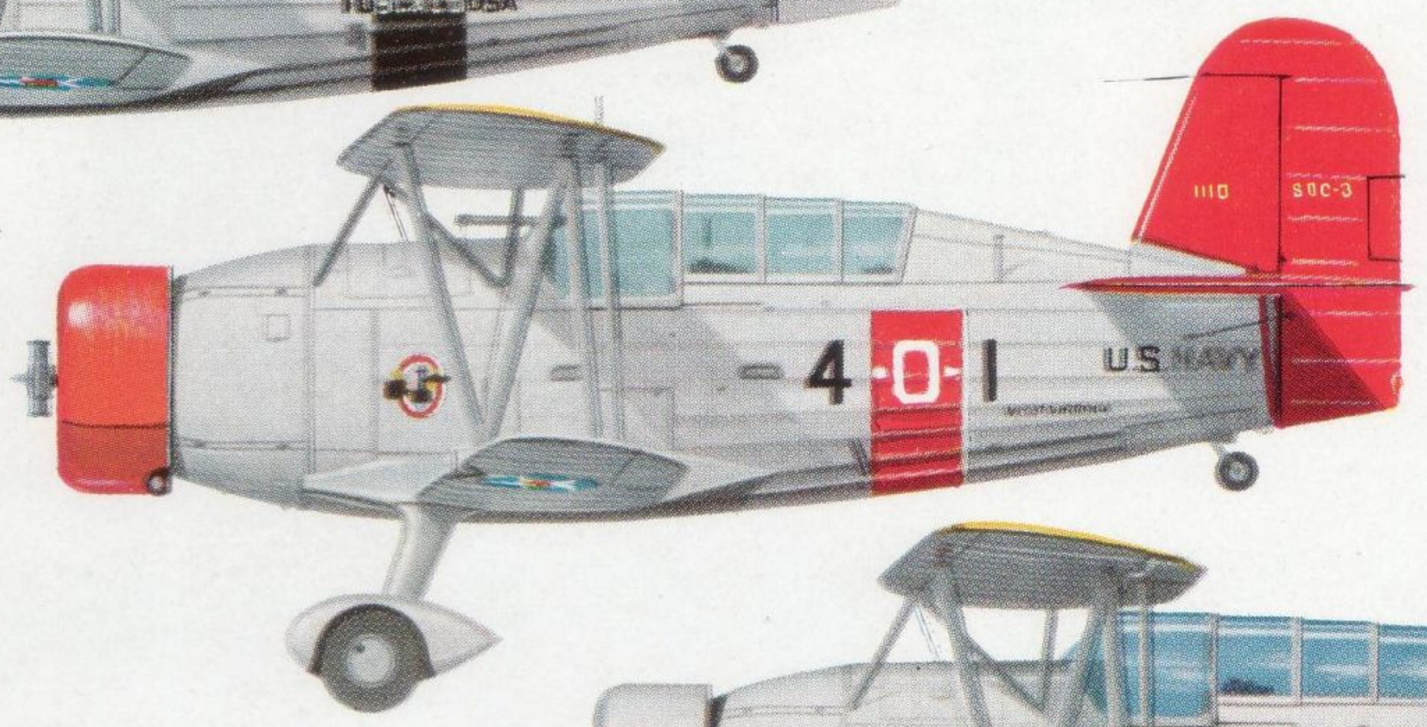
Rear cockpit of the same SOC-1 in August 1935. See the text for a listing of the instruments on the small panel.
(Photo: National Archives —72-AC-96K-9509)



SOC-2, *0387*, of VCS-7 (Cruiser Scouting Sqn. Seven); *U.S.S. Tuscaloosa*
Silver and grey finish, yellow top wing upper surfaces.



VCS-7.



SOC-3, *1110* of VO-4 (Battleship Observation Sqn. Four); *U.S.S. West Virginia*.
Silver finish overall, yellow top wing upper surfaces.

VO-4.

SOC-4 of U.S. Coast Guard; this aircraft also operated on floats from the Coast Guard cutter *Bibby* in 1938-39.
Silver finish overall, yellow top wing upper surfaces.

U.S. Coast Guard.

VO-2.

VCS-3 (stbd. presentation).

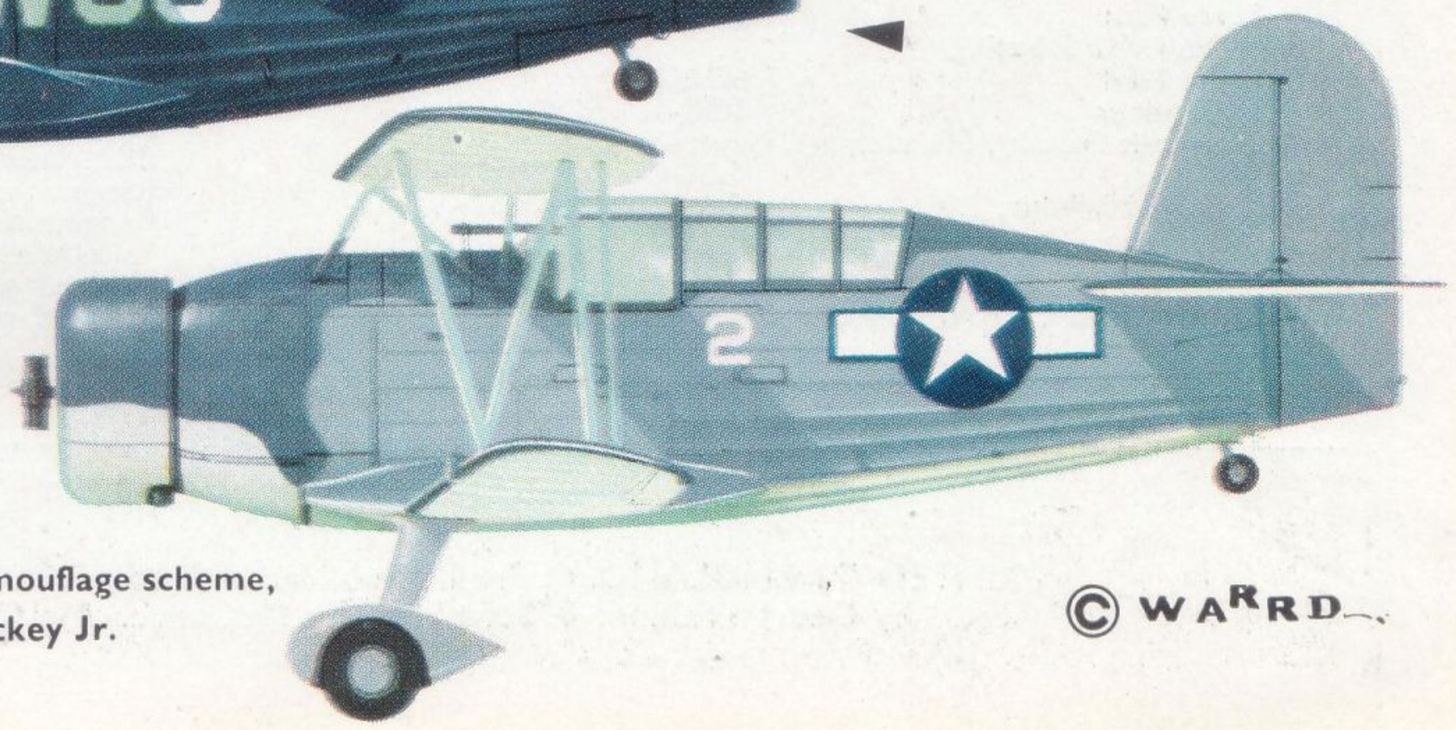
SOC-1, *9877*, of U.S. Navy Patrol Wing One. Neutrality star on nose; silver finish overall, yellow top wing upper surfaces.

SOC-3, *1144* of VCS-9; *U.S.S. Helena*.
Pale grey overall.

VCS-5 (stbd. presentation).

SOC-2, *0402*, of SOSU-3 (Scout Observation Service Unit); N.A.S. Alameda, California.
Flown by Lt. (jg) Fred C. Dickey Jr.

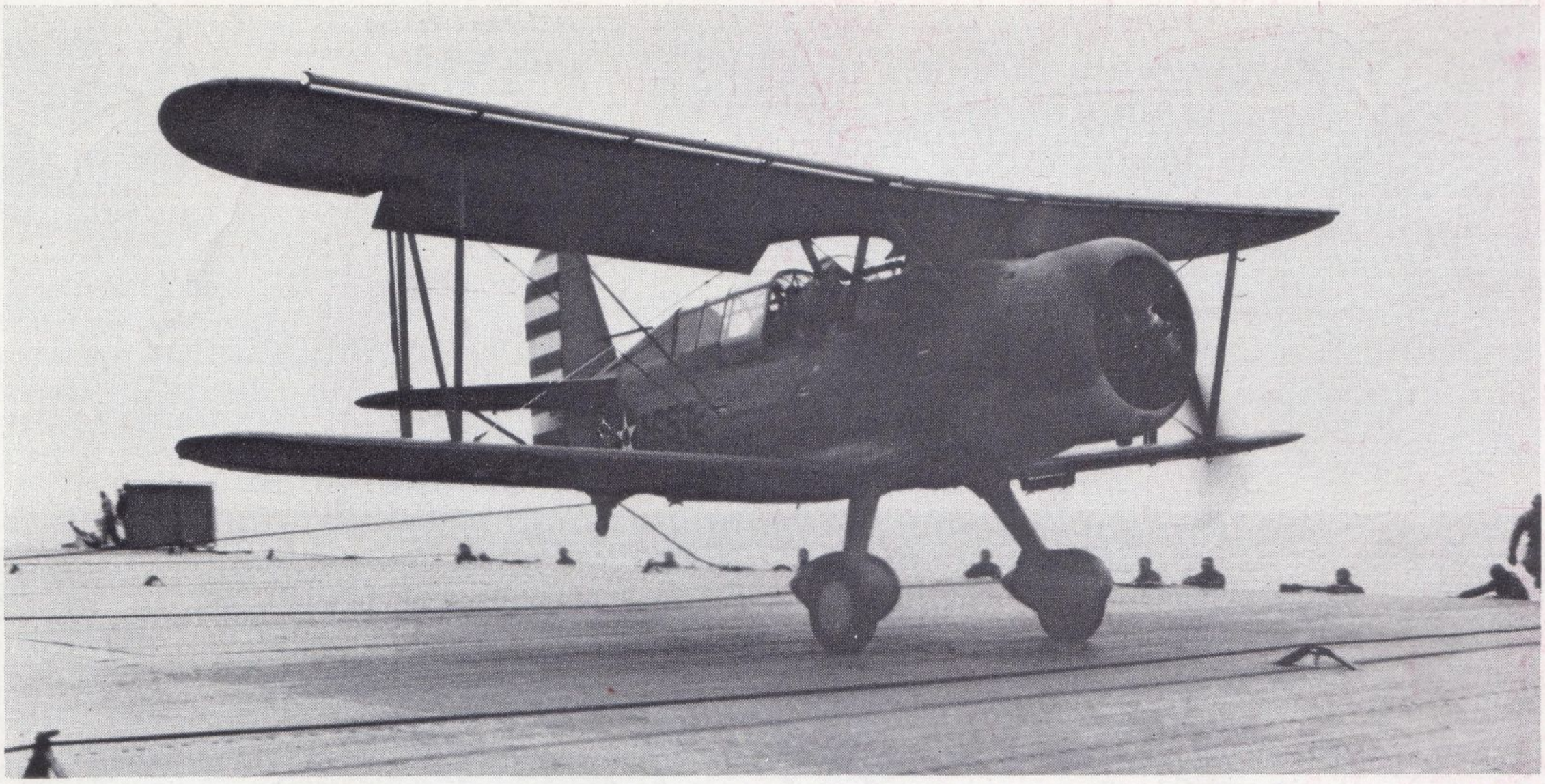
VO-1, *U.S.S. Pennsylvania*.



VCS-8.

SOC-2 of SOSU-3 in wartime camouflage scheme, flown by Lt. (jg) Fred C. Dickey Jr.

© WARD



Lieutenant Commander Lex L. Black, Commanding Officer of VS-201, making the 2,000th landing aboard the escort carrier U.S.S. Long Island *in an SOC-3A on 20th April, 1942. The plane has just come to a stop with the rail hook still engaged on the wire. Squadron markings, in black, are 1-GS-12.* (Photo: National Archives 80-G-14256)

SPECIAL SERVICE SQUADRON

U.S.S. Charleston PG51 Ship Unit	1 SOC-1
U.S.S. Erie PG50 Ship Unit	1 SOC-1

ASIATIC FLEET

U.S.S. Augusta CA31 Ship Unit	3 SOC-1, 1 SOC-2
U.S.S. Marblehead CL12 Ship Unit	2 SOC-1
U.S.S. Langley AV3	2 SOC-1, 1 SOC-2, 1 SON-1
Navy Yard, Cavite, P.I.	2 SOC-1, 1 SOC-2

U.S. MARINE CORPS

Second Marine Aircraft Group, San Diego, California

Marine Scouting Squadron Two-M	
C.O.: Major I. L. Kimes	12 SOC-3

SHORE STATIONS

N.A.S. Anacostia, Washington D.C.	VX-4D5
Experimental Squadron Four, Fifth Naval District	1 SOC-1, 2 SOC-2, 2 SON-1
N.A.S. Norfolk, Virginia	VJ-4D5
Utility Squadron Four, Fifth Naval District	1 SOC-3
N.A.S. Pensacola, Florida	
Overhaul and storage	7 SOC-1
N.A.S. San Pedro, California	
Utility Unit	1 SOC-1
N.A.S. Sitka, Alaska	
Utility Unit	1 SOC-1
N.A.S. San Diego, California	
Overhaul: for Battle Force Pool	1 SOC-1, 1 SOC-2, 4 SOC-3, 4 SON-1
Overhaul: for Scouting Force Pool	5 SOC-1, 3 SOC-2
N.A.S. Norfolk, Virginia	
Overhaul: for Battle Force Pool	1 SOC-3, 2 SON-1
Overhaul: for Scouting Force Pool	5 SOC-1
Miscellaneous	1 SOC-1, 2 SOC-2
Naval Aircraft Factory, Philadelphia, Pennsylvania	1 SOC-2, 1 XS02C-1
N.A.S. Pearl Harbour, T.H.	2 SOC-1, 3 SOC-3

Note: The official designations for ships, used with the hull numbers, are as follows: AV Seaplane Tender, BB Battleship, CA Heavy Cruiser, CL Light Cruiser, CV Aircraft Carrier, PG Gunboat.

Characteristics and Performance of the SOC-1

	Seaplane	*Landplane*
Wing span, upper	36 ft. 0 in.	36 ft. 0 in.
Wing span, lower	35 ft. 6 in.	35 ft. 6 in.
Length overall, plane level	31 ft. 8 in.	26 ft. 10 in.
Height overall	14 ft. 1 in.	13 ft. 2 in.
Wing chord, upper	5 ft. 9 in.	5 ft. 9 in.
Wing chord, lower	4 ft. 6 in.	4 ft. 6 in.
Gap	6 ft. 5 in.	6 ft. 5 in.
Angle of incidence	4 degrees	4 degrees
Dihedral	3½ deg.	3½ deg.
Stagger	20″	20″
Sweepback	4 degrees	4 degrees
Fuel tank capacity	170 gal.	140 gal.
Oil tank capacity	13·5 gal.	13·5 gal.
Airfoil section, upper wing	NACA 0010	NACA 0010
Airfoil section, lower wing	NACA 2212	NACA 2212
Wing area, including ailerons	348 sq. ft.	348 sq. ft.
Aileron area	31·2 sq. ft.	31·2 sq. ft.
Stabilizer area	45·5 sq. ft.	45·5 sq. ft.
Elevator area	25·0 sq. ft.	25·0 sq. ft.
Fin area	10·8 sq. ft.	10·8 sq. ft.
Rudder area	14·7 sq. ft.	14·7 sq. ft.
Normal gross weight	5,153 lbs.	5,000 lbs.
Overload gross weight	5,341 lbs.	—
Weight empty	3,508 lbs.	3,321 lbs.
Normal useful load	1,645 lbs.	1,679 lbs.
Crew weight	400 lbs.	400 lbs.
Armament weight	175 lbs.	175 lbs.
Equipment weight	10 lbs.	44 lbs.
Radio weight	145 lbs.	145 lbs.
Normal load lbs./sq. ft.	15·3	14·6
Normal load lbs./h.p.	9·6	9·2
Maximum speed at sea level	157·3 m.p.h.	162·2 m.p.h.
Stalling speed, normal load	55·9 m.p.h.	55·0 m.p.h.
Stalling speed, less fuel	51·1 m.p.h.	50·2 m.p.h.
Maximum speed at 5,000 feet	153 m.p.h.	158 m.p.h.
Maximum speed at 15,000 feet	133 m.p.h.	139 m.p.h.
Time to climb to 5,000 feet	5·9 min.	5·7 min.
Time to climb to 15,000 feet	31·1 min.	27·0 min.
Endurance at 60%v, normal load	8·32 hrs.	8·64 hrs.
Endurance at 60%v, overload	10·0 hrs.	—
Endurance at 75%v, normal load	5·99 hrs.	6·00 hrs.
Endurance at 90%v, normal load	3·83 hrs.	3·85 hrs.
Endurance at maximum speed	2·63 hrs.	2·63 hrs.
Range at economical speed	846 miles	790 miles
Range, economical speed, overload	954 miles	—
Take-off run, no wind	—	548 feet
Take-off run, 15 knot wind	—	297 feet
Take-off run, 25 knot wind	—	169 feet

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